Editorial

Future-oriented learning, innovative learning environments and curriculum: What's the buzz?

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There is considerable excitement and debate in the educational world around future-oriented education, and a trend towards innovative (or modern) learning environments. This buzz is an international phenomenon. A trend towards innovative, open, and flexible learning environments is underpinned by ideas about 21st-century or future-oriented education. It is supported by International Organisation for Economic Cooperation and Development (OECD) research (including OECD 2006, 2013), which is concerned with educational innovation that will help in the preparation of knowledge workers of the future. These educational shifts are intimately connected with curriculum development, through policy and practice.

Talk around future-oriented learning, also framed as 21st-century learning, is inextricably bound with ideas about the ubiquity of digital (or new) technologies in today's world and their role in shaping teaching and learning (Benade, Gardner, Teschers & Gibbons, 2014; Istance & Kools, 2013). Redesigning learning environments is seen as a way of the future to innovate the "pedagogical core" and promote 21st-century effectiveness (Istance & Kools, 2013) in a fast changing and digitally connected world, which is to be achieved through shifts towards increasingly student-centred, personalised, inquiry-based, differentiated, collaborative, communal, and authentic learning (Osborne, 2013). Future-oriented education claims to envision and support a paradigm shift in education and transformation of teaching and learning in ways that are more responsive to the needs and interests of new millennium learners (Bolstad et al., 2012; OECD, 2013).

To date, a number of New Zealand government educational policies and initiatives that have gained momentum in recent years relate to innovative or future-oriented learning and digital technology. The potency and connectedness of ideas about 21st-century, future-oriented, and digitally enhanced learning is evident in the Forward by the Minister of Education to the Ministry of Education Statement of Intent for 2013 to 2018.

> New technology has the power to transform how children and young people learn. We will develop and implement a digital education strategy, which will support schools and educators to harness new technologies to prepare students with 21st century skills. Our response to the recommendations from the Select Committee Inquiry into 21st Century Learning Environments and Digital Literacy will provide direction and impetus to this work. (Ministry of Education, 2013, p. 2)

Policy aimed at creating an environment and tools for lifting educational achievement includes support for a "21st century learning system with high quality, relevant learning environments" (Ministry of Education, 2013, p. 28), to be achieved through mechanisms that include new and modern school design initiatives and ultra fast broadband roll out. Moreover, future-focused education and innovative learning environments are seen to serve the needs of the nation by educating learners in ways that allow them to be innovative, and to participate and contribute to society in an economically competitive world.

Multiple discourses are evident in the talk and published research relating to 21st century and future-oriented education and innovative learning environments, relating to economic, technological, and social justice or equity concerns, amongst others (Abbiss, 2013). These co-existing discourses mean that future-oriented education, the trend towards innovative learning spaces, and potential to transform education is likely to be understood differently. Future-focused and innovative educational developments can be seen as more or less transformational, democratic, or equitable. They can be seen to address, to greater or lesser extents, the technological, economic, or social imperatives associated with the movement and to be more-or-less bound up with neoliberal policy discourses that emphasise educational efficiency and competitive performance. Reasons may vary for supporting future-oriented educational

initiatives, but the embracing of innovative learning environments by schools and associated changes to the organisation of teaching and learning is plainly evident and amply reflected in international and New Zealand school case-studies (see, for example, Ministry of Education, 2015; OECD, 2013; Osborne, 2013). However, the longer-term implications of this trend towards innovative learning environments for curriculum, teaching, and learning are less distinct. Some implications will only become apparent with time and the ability to look back on developments.

Concentrating on ideas of innovative and future-oriented learning invites consideration of what is, or isn't, new about recent developments. There is an argument that much of what is touted as "new" in 21st century or future-oriented learning is not new at all. Benade et al. (2014) encapsulate this:

> Certain ideas advocated as 21st-century learning (such as empowerment of students, and the greater democratisation of the learning process) are not different from the points that were being raised by critical thinkers in the 20th century (such as Dewey, Freire, Illich and Postman & Weingartner). What differs now, however, is the power of digital tools that connect young people with each other and vast storehouses of knowledge in the wider world. (pp. 56–57)

While recognising the role of digital technology in presenting possibilities for shifting schooling practices and impelling greater collaboration and openness in teaching, Benade et al. (2014) also caution against technologically deterministic assumptions, pointing out that many changes in schooling, and shifting views of the desired attributes of teachers, have been advocated by key proponents across decades. In other words, these are not actually new ideas. Nonetheless, the movement for future-oriented learning and innovative learning environments is helping to change the face of education, teaching, and learning in New Zealand schools. This movement provides exciting opportunities to alter the way learning is organised, encourage more interactive and less transmissive models of teaching, shift teacher–learner relationships towards greater reciprocity, and create and encourage community connections, all of which is about shifting the curriculum in practice and as experienced by learners.

The aspirations of future-oriented education and innovations of innovative learning environment also resonate with *The New Zealand Curriculum*, particularly with the principles (which include *learning to learn*, *community engagement*, *future focus*, and *inclusion*), values (including *innovation*, *inquiry and curiosity*, *diversity*, *equity*, and *community and participation*), and the key competencies (*thinking*; *using language, symbols and texts*; *managing self*; *relating to others*; *participating and contributing*) (Ministry of Education, 2007). As such, they are consistent with the notion of developing learning capacity (Bolstad et al., 2012).

There are, though, tensions evident from early examples of innovative learning environments that relate to the shifting curriculum in practice. Not least amongst these are the tensions generated by school-wide shifts towards future-oriented learning and the creation of innovative learning environments, which may clash with some teachers' beliefs about teacher–learner relationships and what constitutes effective teaching and learning, or with the imperatives of national and high-stakes assessment, such as the National Certificate of Educational Achievement (NCEA) which teachers see and experience as a barrier to curriculum innovation. Drawing on a broader theoretical base and two school case studies, Benade et al. (2014) argue that what teachers consider to be learning is very important in effecting shifts in practice—"where teachers consider play, games, and disorder to be anathema to good learning, then the 21st learning space will be uncomfortable" (p. 56).

Another set of tensions relates to shifting ideas about the relevance of disciplinary knowledge in future-oriented education. There is a suggestion that shifting the focus of schooling away from knowledge that must be imparted, and towards 21st-century skills and fostering learning capacity, places some disciplinary knowledge in a tenuous position (Benade et al., 2014) and is a source of discomfort for teachers, particularly in the secondary sector (Bolstad et al., 2012). Some educationalists and researchers, including Bolstad et al. (2012), highlight the importance of rethinking the position of disciplinary knowledge. This is not to suggest that disciplinary knowledge no longer matters. Rather, the authors argue for the engagement of students in authentic learning and collaborative knowledge building, underpinned by knowledge of how knowledge systems (or disciplines) work and how

mathematicians, scientists, and historians, for example, understand and find out about the world—"this kind of systems or metalevel knowledge and the ability to move between disciplines is more important than just knowing the detailed facts of those disciplines" (p. 36). Disciplinary knowledge is seen less as an end in itself and more as "a context within which students' learning capacity can be developed" (p. 38).

There is much still to know and learn through theoretical and empirical research relating to future-oriented education and innovative learning environment design and use, particularly as these relate to curriculum issues, theory, developments, and practice. In thinking about the nexus of curriculum, future-oriented learning, and the expansion of innovative learning environments in New Zealand and internationally, some questions that emerge for this Editor are:

- What are the implications of a shift towards future-oriented learning and the development of innovative learning environments for the curriculum, both in practice and as experienced by learners? How democratic, equitable, or transformative is the shifting curriculum for different groups of learners?
- What is the role of the teacher-as-curriculum maker in contexts where teachers and learners are positioned as co-constructors of curriculum and where notions of teacher knowledge and expertise may be reframed?
- What changes might shifts towards more personalised, inquiry-based, collaborative and authentic learning mean for teaching in relation to disciplinary knowledge, and how this might be organised and conveyed either through conventional subjects or through integrated curricula?
- What do new (digital) technologies make possible? How is this different from what was possible before? And how does (or doesn't) it support deeper and richer learning in curriculum contexts?
- How might the de facto or default curricula that are created by national assessment regimes and different assessment practices support or constrain aspirations for future-oriented learning? How might future-oriented learning be integrated with and support learning for NCEA and high-stakes assessment?

- How does curriculum policy reflect and sustain particular, coexisting, and potentially complementary or contradictory discourses of future-oriented and innovative learning?

While these questions reflect initial, tentative cogitations on the topic, they and other questions offer potential fruitful avenues for ongoing and future research in the field of curriculum studies, nationally and internationally.

This collection

The eight articles in this edition of *Curriculum Matters* explore a variety of curriculum issues, in different sectors (early childhood, primary, and secondary) and subject or learning contexts (science, health, social studies, mathematics, visual arts, literacy). They are an eclectic collection with a common thread relating to relationships between curriculum, teaching, and learning.

The first two articles have links with future-oriented learning themes, through the interest shown in questions of social justice, community engagement, and the transformational potential of particular forms of teaching and learning. In the context of senior social studies education, Maria Perreau examines resources for and about social justice. She highlights the limitations and transformational possibilities of different resources that are available to teachers to support social justice-related teaching and learning. A distinction is drawn between resources produced for assessment purposes and those produced in support of broader curriculum objectives, with the assessment-focused resources shown to have more limited transformational potential. Tensions are evident between broader educative and narrower assessment functions of resources and teaching and learning in relation to social justice. Ian Bowell draws on case-study research to examine the potential of community arts education projects to enrich communities and support teaching and learning in school contexts. This article highlights the important role that community-based education and teaching collaborations can play in engaging students and supporting their learning in the arts, as well as the professional learning of teachers involved in the education initiatives and working with other educators in the community. Although neither article is explicitly couched in the discourse of future-oriented education, readers

might extrapolate from the findings of these two research papers to the aspirations of future-focused education—relating to student-centred, communal, and authentic (real-world) learning with transformational potential.

Matters of knowledge construction are also associated with debates around future-oriented education. The next four articles variously explore matters related to knowledge construction and the nature of subjects and learning, in the fields of early childhood education, health and science education. Sarah Probine reports findings of a centre-based research project about visual arts pedagogies in early childhood education, with a dual focus on teachers' thinking about visual arts pedagogies and how children construct knowledge and make their learning visible to themselves and others through image making. She presents an example of how teachers in a centre reconceptualised visual arts and developed a culture that values visual arts as a pedagogical tool. Jenny Robertson asks whether health education in schools has come of age. She reflects on developments in health education over 21 years and explores two propositions, one relating to underlying concepts that define health-education knowledge and the other to the establishment of a pathway to meaningful (NCEA) qualifications. She highlights tensions between the intent of the official curriculum and the interpretation in practice and reasons that health education still faces a number of challenges relating to understanding of the knowledge foundations and maturing of the subject.

With a focus on science education, Georgina Stewart and Cathy Bunting examine what the recently developed strategic plan for science in society, a government initiative, means for science education, particularly primary science education. The logic of the project is brought into question where it appears not to distinguish between knowledge required by scientists and knowledge required to teach science. The notion of "teaching science as a practice" is adopted as a way of contributing to functional knowledge of science and supporting science teaching and learning. Similarly interested in science education, and particularly the teaching of the "nature of science" curriculum component, Rose Hipkins and Ally Bull illustrate how focusing on the nature of science might support the development of science capabilities. Science capabilities are presented as a set of ideas, which teachers might use as classroom prompts to think

more deeply about the nature of science with their students. The science capabilities project is presented as a work in progress. Together these two science-focused articles suggest that science education is a dynamic field and that there is ongoing work to develop shared understandings of what it means to teach science and about the type of knowledge and understandings required by science teachers and learners.

The final two articles in the collection focus on connections between curriculum, assessment and reporting in relation to writing and reading. Judy Parr and Gavin Brown examine the recent revision of the *e-asTTle: Writing* assessment tool from a range of perspectives, questioning aspects of the revision in light of English curriculum guidelines and performance standards for reading and writing in Years 1 to 10. They argue that an increased emphasis in scoring on the more technical aspects of writing in the revised writing assessment tool risks sending inappropriate messages to teachers and students about what is valued in quality writing, with potentially limited ability to aid teacher learning about writing and negative consequences for curriculum implementation. Rounding out the collection, Rowena Pearson, Helen Dixon, and Eleanor Hawe investigate claims that written reporting of primary students' progress and performance against National Standards will have the benefit of fully informing parents about the progress of their children and ensure that parents are better able to support their children's learning. Focusing on the reporting of reading progress, and basing their investigation on the responses of a small group of parents, they contend that such claims are not realised in reality. The authors present ideas for potentially more effective reporting approaches that they argue would better support parents and help make students' learning visible.

Curriculum negotiations are complex and many people are involved in the teaching and learning process, including learners, parents, teachers, and curriculum and assessment developers. The articles in this collection highlight the complexity of these processes, raise questions, and provide springboards for ongoing research and debate relating to curriculum matters, educational change, and shifting teaching and learning practices.

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